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DEPARTMENT : INFORMATION TECHNOLOGY

SUBJECT : ARTIFICIAL TECHNOLOGY

LAB:4

TASK:1

Write a Python program to take two numbers as input and perform all arithmetic operations on them.

```
a = float(input("Enter first number: "))
b = float(input("Enter second number: "))
print("Sum:", a + b)
print("Difference:", a - b)
print("Product:", a * b)
print("Quotient:", a / b)
print("Remainder:", a % b)
```

OUTPUT

```
Enter first number: 4
Enter second number: 7
Sum: 11.0
Difference: -3.0
Product: 28.0
Quotient: 0.5714285714285714
Remainder: 4.0

=== Code Execution Successful ===
```

TASK:2

Create a function that takes two numbers and returns their sum, difference, product, and quotient.

```python
def arithmetic_operations(a, b):
    return a + b, a - b, a * b, a / b
a = float(input("Enter first number: "))
b = float(input("Enter second number:"))
sum_, diff, prod, quot = arithmetic_operations(a, b)
print("Sum:", sum_)
print("Difference:", diff)
print("Product:", prod)
print("Quotient:", quot)
```

OUTPUT

```
Enter first number: 50
Enter second number:30
Sum: 80.0
Difference: 20.0
Product: 1500.0
Quotient: 1.6666666666666667

=== Code Execution Successful ===
```

TASK:3

Write a Python script to find the remainder when one number is divided by another.

```python
a = int(input("Enter the dividend: "))
b = int(input("Enter the divisor:"))
remainder = a % b
print("Remainder:", remainder)
```

OUTPUT

```
Enter the dividend: 756
Enter the divisor:46
Remainder: 20

=== Code Execution Successful ===
```

TASK:4

Write a program to calculate the area of a circle using the formula: `Area = π * r^2`.

```python
import math
radius = float(input("Enter the radius of the circle: "))
area = math.pi * radius ** 2
print("Area of the circle:", area)
```

OUTPUT

```
Enter the radius of the circle: 5
Area of the circle: 78.53981633974483

=== Code Execution Successful ===
```

TASK:5

Implement a program that takes a number as input and returns its square and cube using exponentiation.

```
num = float(input("Enter a number: "))
square = num ** 2
cube = num ** 3
print("Square:", square)
print("Cube:", cube)
```

OUTPUT

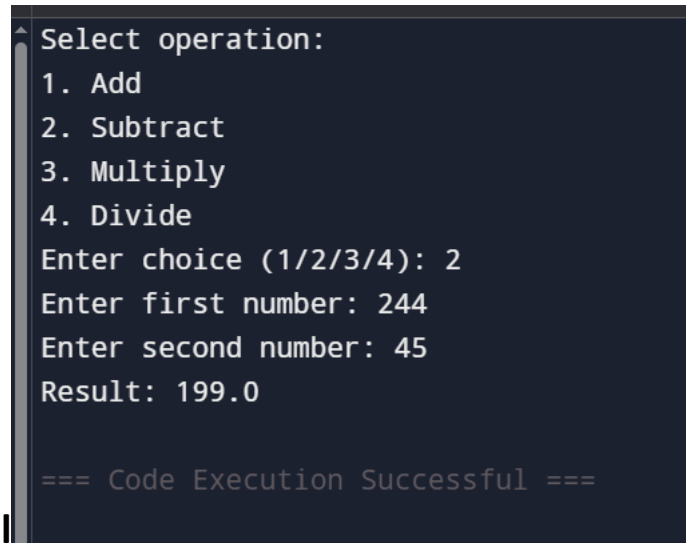
```
Enter a number: 4
Square: 16.0
Cube: 64.0

=== Code Execution Successful ===
```

TASK:6

Create a simple calculator in Python that allows the user to choose an operation (addition, subtraction, etc.) and inputs two numbers.

```python
print("Select operation:")
print("1. Add")
print("2. Subtract")
print("3. Multiply")
print("4. Divide")
operation = input("Enter choice (1/2/3/4): ")
num1 = float(input("Enter first number: "))
num2 = float(input("Enter second number: "))
if operation == '1':
    print("Result:", num1 + num2)
elif operation == '2':
    print("Result:", num1 - num2)
elif operation == '3':
    print("Result:", num1 * num2)
elif operation == '4':
    if num2 != 0:
        print("Result:", num1 / num2)
    else:
        print("Error: Cannot divide by zero")
else:
    print("Invalid input")
```

OUTPUT


Select operation:
1. Add
2. Subtract
3. Multiply
4. Divide
Enter choice (1/2/3/4): 2
Enter first number: 244
Enter second number: 45
Result: 199.0
=== Code Execution Successful ===